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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/533,022
Filing Date: April 26, 2005
Appellant(s): SCHMIDT, THOMAS

Alfred W. Froebrich
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 22, 2011 appealing from the Office action mailed August 25, 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1, 2, 4, 7, and 10

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,631,445	Herster	5-1997
5,697,769	Kobman et al.	12-1997
6,478,613	Zoell et al.	11-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1, 2, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herster US 5,631,445 ("Herster") in view of Zoell et al. US 6,478,613 (Zoell).

- a. With respect to **claim 1**

- i. **Herster** – Herster teaches all the limitations as claimed for a connection piece 20 for a fuel pump 22 including: a receiving device 58 a plug 34 arranged in the receiving device 58, the plug 34 having electrical contacts (44, 45) for connecting an electric motor (not shown) of the fuel pump 22 to a mains supply (via 28) and an integrally formed, circumferential sealing lip (lower horizontal surface of groove 62; "62") which includes a region that is oriented toward the electrical contacts (44, 45) and which seals the plug 32 against the receiving device 58 (Herster - col. 4 ll. 45-50) when fuel is conveyed through the fuel pump 22 (collar 62, groove 62, and O-ring 66 form a seal whenever plug 32 is inserted into cover 20, the plug is inserted into the cover 20 when the fuel pump 22 operates therefore the lower horizontal surface of the groove seals the plug while the pump 22 operates), the plug forms a plug casing (50, 54, 56, 60, 64) in which the circumferential sealing lip 62 is integrally formed together with the plug casing (50, 54, 56, 60, 64) in one working step (since the plug 32 is a single monolithic element) to permit simultaneous production of the integrally formed circumferential sealing lip 62 with the plug casing (50, 54, 56, 60, 64);

- ii. **Zoell** – Herster does not teach the limitations for a plug that is extrusion coated with plastic as taught by Zoell.
- iii. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have coated the plug of Herster with plastic as taught by Zoell to protect the parts from the fuel (Zoell - Abstract).
- iv. It has been held that the “determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ (Fed. Cir. 1985). The examiner notes that the recitation of a circumferential sealing lip formed together in one working step with a plug casing has not been given patentable weight because the limitation constitutes a method step that has been recited in a claim for an apparatus. Statements like these are treated as a product by process claim limitations. Therefore the claimed method steps are not germane to the patentability of the apparatus. MPEP §2113.

b. With respect to **claims 2, 4, and 7** Herster teaches all the limitations as claimed including:

[claim 2] wherein the circumferential sealing lip 62 is arranged on the plug 32 in a region of a bushing 56 of the electrical contacts (44, 45);

[claim 4] wherein the circumferential sealing lip 62 is elastically deformable (element 50 deforms and elastically returns to a resting

position once the plug 32 is inserted into cover 20 far enough for notched sections 60 to engage the face of the ring 58; as all of element 32 is made from the same material and at least one part of the plug 32 deforms the lip as defined by groove 62 is formed from a material that is generally elastic);

[claim 7] wherein the receiving device 58 receives and holds the plug 32 by a latching means (via notched ends 60 of tabs 50 snapping/latching to the end face of the ring 58).

4. Claims 1, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobman et al. US 5,697,769 in view of Zoell.

a. With respect to **claim 1**

i. **Kobman** – Kobman teaches all the limitations as claimed for a connection piece 30 for a fuel pump 20 including: a receiving device 68 a plug (element 32 including elements 54, 56, 58, 62, 64, 75, and 76; “32”) arranged in the receiving device 68, the plug 32 having electrical contacts (75, 76) for connecting an electric motor (33, 34) of the fuel pump 20 to a mains supply (via 28) and an integrally formed, circumferential sealing lip (56) which includes a region (upper face of element 56 that abuts the lower end face of element 68) that is oriented toward the electrical contacts (75, 76) and which seals the plug 32 against the receiving device 68 when fuel is conveyed through the fuel pump 20 (flange 56 and skirt 68 form a seal whenever plug 32 is inserted into cover

30 (i.e. connection piece), the plug 32 is inserted into the cover 30 when the fuel pump 20 operates therefore the lower horizontal surface of the flange 58 seals the plug 32 while the pump 20 operates), the plug 32 forms a plug casing (54, 56, 62, 64, 75, 76) in which the circumferential sealing lip 56 is integrally formed together with the plug casing 54 in one working step (since the plug at least flange 56 and base is a single monolithic element) to permit simultaneous production of the integrally formed circumferential sealing lip 56 with the plug casing (54, 56, 58);

ii. **Zoell** – Kobman does not teach the limitations for a plug that is extrusion coated with plastic as taught by Zoell.

iii. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have coated the plug of Kobman with plastic as taught by Zoell to protect the parts from the fuel (Zoell - Abstract).

b. With respect to **claims 6 and 10** Kobman teaches all the limitations as claimed including:

[claim 6] wherein the connection piece 30 defines a recess (as defined by the space surround the by skirt 68 just underneath the shoulder formed between the bottom of the side wall 66 and the top of the skirt 68; “66/68”) said material forming plug casing 32 forming an edge (outer top edge of base 54 disposed below shoulder defined between the skirt 68 and side wall 66; “54-top edge”) around said electrical contacts (75, 76), said

recess (66/68) receiving said edge (54-top edge), and said circumferential sealing lip 56 surrounding said recess (66/68) on an inner side of said connection piece 30; and

[claim 10] wherein the receiving device 68 is configured so that, in an' installed state of the connection piece 30 on the fuel pump 20, fuel pressure acts on the plug 32 from one side to press the circumferential sealing lip 56 against the connection piece 30.

(10) Response to Argument

A. In response to Appellant's arguments to the rejection of claims 1, 2, 4, and 7 under 35 U.S.C. § 103(a) as being unpatentable over Herster in view of Zoell

i. The Appellant argues the "circumferential sealing lip" in claim 1 must have the features including:

(i) [T]he sealing lip is required to be circumferential and have a region that is oriented toward the electrical contact and, at the same time, (ii) the sealing lip is required to seal the plug against the receiving device when fuel is conveyed through the fuel pump, and (iii) the sealing lip is required to be integrally formed with the plug casing.

US App. 10/533022 Appeal Brief of February 22, 2011 ("Appeal Brief"), pg. 4.

Response: The limitations of claim 1 require a "circumferential sealing lip which includes a region that is orientated toward the electrical contacts and seals the plug against the receiving device." Appeal Brief, Appendix at A-1.

First the examiner notes that the limitation "orientated toward" is very broad and an element doesn't have to directly face another element to meet the limitation, it only has to be orientated in a general direction of another element. The limitation

imparts no discrete structural arrangement or direct physical interaction between elements in the claim. The limitation encompasses (a) a surface having a longitudinal axis that actually intersects another element because (i) depending on a person's vantage point traversing the axis via the surface could move the person toward or away from the element in question and (ii) the surface could have been formed in a direction directly pointing towards the other element thus the actual formation could serve as an "orientation." The limitation also encompasses the interpretation of (b) any surface of any element facing in a direction over which the plane of a surface of another element exists (i.e. if element A is above element B but the two elements are not aligned any surface of B that faces upwards is directed toward element A because the surface is directed toward a plane that intersects element A in a vertical direction) because that surface is orientated in a general direction of the other element.

Second, the claim recites a non-descript "region" of circumferential sealing lip which could encompass any part of a corresponding element taught by the prior art. There is no limitation directed toward a particular portion or discrete physical feature (such as "a region") of the sealing lip that must come in contact with any part of the plug or the receiving device, and form a seal.

Finally, the limitation "circumferential sealing lip which includes a region . . . and which seals the plug" could be interpreted as either (a) the sealing lip as a whole forms a general seal between two elements or (b) the recited "region" of the sealing lip exclusively forms the seal. The claim language does not clearly

attribute the function of “seals against the plug” to the lip of the sealing lip because as claimed it could equally be interpreted to be attributed to the “region.” The limitation does not read “circumferential sealing lip which includes a region that is orientated toward the electrical contacts[,] and which seals the plug.” This would clearly define that which would be considered to form the physical seal in claim 1.

Interpreting either of the “region” or the “circumferential sealing lip” in total (i.e. as an assembly where some component forms a seal) as forming a seal, is commensurate in scope with the instant disclosure. The lip 17 is comprised of the region 18 and a contact surface (not designated) that surrounds the region 18. The contact surface is formed on the end face of the lip 17. The lip 17 provides a seal by coming in contact with the connection piece 4, not by forming an impermeable bond. US App. 10/533022 (“App.”), pg. 4, ll. 29-21. The contact surface does not permanently bond the lip 17 to a surface of the connection piece, it is held in abutment by latches 11. App., pg. 4, ll. 18-20. The contact surface of the lip 17 always meets the limitation of “seals the plug against the receiving device.” However at times during pump operation the lip 17, including the contact surface and the region 18, will deform because the lip 17 is elastic and the pressure that presses the plastic casing 8 toward the connection piece increases. App., pg. 2, ll. 12-16, 22-24; pg.4, ll. 29-34. As the lip 17 deforms, the contact surface moves outward from a central axis because it is not permanently bonded to the connection piece 4, and the region 18 is angled outwards like arms

which causes the lip 17 to spread. This in turn puts the region 18, or a portion thereof, in sealing contact with the connection piece 4. Therefore since both the contact surface and the region 18 of the lip 17 come in sealing contact with the connection piece, both interpretations for "circumferential sealing lip which includes a region. . . and which seals the plug" are commensurate in scope with the instant invention as disclosed.

ii. The Appellant argues that the seal in Herster is provided exclusively by the O-ring 66. Specifically the Appellant interprets Herster to disclose:

an electrical fitting for routing wires to an in-tank mounted fuel pump which provides an effective barrier against fuel vapor emissions from the fuel tank" (see col. 1, lines 6-9). *Herster* (col. 4, lines 45-50) expressly explains that "plug 34 has an annular groove 62 in collar 64 between flange 54 and tabs 50 for receiving an O-ring 66 or other sealing device" to provide "a seal between fitting 32 and downstanding ring 58".

Appeal Brief, pg. 4. The Appellant asserts that the O-ring 66 is provided to achieve the sealing function. Appeal Brief, pg. 4.

Response: The examiner notes that the Appellant has parsed the disclosure of Herster to state a proposition that the by seal, Herster means exclusively an O-ring. This is not what Herster discloses. The section the Appellant has cited actually states "[t]o provide a seal between fitting 32 and downstanding ring 58, plug 34 has an annular grooved 62 in collar 64 between flange 54 and tabs 50 for receiving an O-ring 66. . . ." Thus Herster does not separate the function of actually sealing the plug 34 to the O-ring 66. In order for there to be an effective seal in Herster, the groove 62 is required. If instead the bottom surface of the groove 62 was not provided and the O-ring 66 was placed under the collar 64 it

would not function effectively as a seal. In that configuration the O-ring 66 would always have a bottom surface that was entirely in contact with a larger volume of fuel vapor that if provided with the bottom surface of the groove 62. The vapor could more readily seep past the O-ring because there would be nothing blocking the vapor in front of the O-ring 66. Thus Herster teaches that the groove is an integral sealing component of sealing assembly composed of the groove 62 and the O-ring 66 inside of the collar 64.

iii. The Appellant argues that the bottom surface of the groove 62 taught by Herster is not orientated toward a receiving device because it extends perpendicularly to the surface of the receiving device.

Response: As discussed above the term "orientated toward" is an extremely broad limitation. The examiner notes that the limitations are not limited to any one type of direction or frame of reference. The direction the surface is "orientated" is dependent on what vantage point or frame of reference is being used. The reason the region can be claimed as "orientated toward the electrical contacts" is because the claim assumes that a frame of reference is outer circumference, the contact surface, of the sealing lip. Conversely, as disclosed the region 18 could provide equal support for a limitation where the "a region" was claimed as being orientated away from the electrical contacts. Herster teaches tabs that extend at angle from a central body 34 in the same way that the region 18 of the instant invention extends from the plastic casing. However, Herster teaches that these tabs "project from lower end 52" and thus away from

the lower end because Herster has taken as a reference point to be the lower end 52 of the plug 34. The examiner notes that the lower surface of the groove 62 defines a claimed "region," the outer edge of this surface is analogous to the contact surface of the sealing lip 17 of the instant invention. Taken from the same frame of reference, the bottom surface of the groove 62, like the surface that defines the region 18 in the instant invention, extends toward the electrical contacts from its edge. The groove 62, and thus the bottom surface, can be described as extending from an outer peripheral surface *toward* a central axis and the electrical contacts. It is therefore within reason to consider the bottom surface of the groove 62 as orientated toward the electrical contacts (44, 45).

The examiner also notes the bottom surface was formed or "orientated" in the direction of the electrical contacts (44, 45). In addition to this when the O-ring is placed in the groove 62, it traverses the lower horizontal surface of the groove 62 from the outside toward the electrical contacts. The O-ring 66 is guided towards the electrical contacts (44, 45) by at least the lower surface of the groove 62.

iv. The Appellant argues that Herster fails to teach any portion of the groove is provided to seal a plug against a receiving device. Appeal Brief, pg. 6.

Response: The examiner first notes that as disclosed the sealing lip 17 forms a seal with the connection piece by being put in contact with a surface of the connection piece 4. The lower surface of the groove 62 also comes in contact with a surface to form a barrier between the inside of the plug 34 and the cover

20. This contact at least creates an appreciable seal that would prevent liquid (such as fuel in a tank) from getting past the plug and out of the tank 12. The seal is provided with an O-ring 66 to also prevent fuel vapor (a gaseous state) from getting past the plug 34. The O-ring enhances the plug's ability prevent gas from seeping out of the tank. This however does not mean that contact, between the lower surface of the groove 62 that comes into contact with the inner wall of the surface 56, does not serve a sealing function. This contact provides a barrier between the tank opening and the lower portion of the plug 34.

The examiner notes again that the limitations do not require a specific portion of the sealing lip to form the physical seal. The bottom surface of the groove 62 in Herster works in conjunction with the O-ring to form a seal that prevents vapor from seeping through the plug. The O-ring would not form an effective seal if the lower surface of the groove was not provided to block a majority of fluid that the O-ring would come in contact with if the surface were not there. The bottom surface also guides and houses the O-ring to constructively seal the plug. The physical seal in Herster is comprised of the O-ring 66 and the groove 62, i.e. they seal the plug against the receiving device. Herster teaches the limitations of claim 1 for the purpose of the rejection under 35 U.S.C. 103(a) set forth in Final Office Action of August 25, 2010. Final Office Action of August 25, 2010 (“Final Action”), pg. 3-4.

v. The Appellant argues that Zoell does not teach a circumferential sealing lip meeting the limitations of claim 1 and therefore the combination of Herster and Zoell does not teach the limitations of claim.

Response: Zoell was not relied upon to teach a circumferential sealing lip. Zoell was relied upon to teach that it was known to provide an extrusion coated plug. Final Action, pg. 4. The Appellant has not argued that Zoell is not applicable to Herster. As Herster teaches the limitations of circumferential sealing lip as discussed above, and it would be obvious to apply the process of Zoell for constructing the plug of Herster, the combination of Herster and Zoell teach the limitations of claim 1, 2, 4, and 7.

B. In response to Appellant's arguments to the rejection of claims 1, 6, and 10 under 35 U.S.C. § 103(a) as being unpatentable over Kobman in view of Zoell

i. The Appellant argues that there is no description of the flange 56 asserted to form a circumferential sealing lip outside of what is provided in column 2 lines 30-36 of Kobman.

Response: The disclosure of Kobman does not provide extensive detail regarding the flange 56. However one or ordinary skill in the art would be able to view figures 1, 3, and 4 and ascertain that the flange 56 forms an annular surface that constitutes a lip that protrudes from the base 54 of the plug constructively formed by element 32. In an assembled state element 32 forms a single component that is received in the skirt 68 of the cover 30 and includes ways 58, brushes (62, 64), and conductive pins (74,75). The upper surface of the flange

56, abuts the end surface of the skirt 68, and is a region of the lip defined by the flange 56. The abutment between the upper surface of the flange 56 and the lower end surface of the skirt 68, forms a contact type of seal between the plug 32 and the receiving device defined by the skirt 68. Kobman, col. 2 ll. 32-36.

ii. The Appellant argues that the flange 56 of Kobman does not teach a circumferential sealing lip that is orientated towards electrical contacts because it is aligned perpendicularly relative to a side wall 54 and is orientated outward. The Appellant argues with respect to the upper surface of flange 56, the surface extends parallel to the plane created by the electrical contacts (74, 75) of Kobman.

Response: The instant disclosure states that the region 18 of the sealing lip 17 "points in a direction of the electrical contacts 6." App. pg. 4, ll. 30. Claim 1 does not however limit the region to "pointing" toward electrical contacts. The limitation "orientated towards" is broader than that type of "orientation." Further the claim does not define a structure of the sealing lip that must be "orientated towards" electrical contacts in definite terms. Only that it be "a region" of the sealing lip, and not for example a surface, a recess, or a distal end. Claim 1 does not provide a frame of reference from which "a region" must be "orientated towards" the electrical contacts. The Appellant argues that electrical contacts (74, 75) define a vertical plane that is parallel to the direction the top surface of the flange faces. However the contacts (74, 75) have an appreciable width and define a horizontal plane that is above the upper surface of the flange 56. The

flange faces or is “oriented toward” the plane defined by the bottom of the contact. Further the flange 56 is disposed below the electrical contacts (74, 75) and the top surface of the flange 56 faces upwards in a direction *towards* the electrical contacts (74, 75), since the contacts (74, 75) are above it. Therefore the upper surface of the flange is oriented toward a general direction of the contacts and meets the limitations of claim 1.

iii. The Appellant argues that Zoell does not teach a circumferential sealing lip meeting the limitations of claim 1 and therefore the combination of Kobman and Zoell does not teach the limitations of claim.

Response: Zoell was not relied upon to teach a circumferential sealing lip. Zoell was relied upon to teach that it was known to provide an extrusion coated plug. Final Action, pg. 6-7. The Appellant has not argued that Zoell is not applicable to Kobman. Kobman teaches the limitations of circumferential sealing lip as discussed above, and it would be obvious to apply the process of Zoell for constructing the plug of Kobman, therefore the combination of Kobman and Zoell teach the limitations of claim 1, 6, and 10.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Leonard J Weinstein/

Examiner, Art Unit 3746

Conferees:

/Devon C Kramer/

Supervisory Patent Examiner, Art Unit 3746

/Robin O. Evans/
Supervisory Patent Examiner, Art Unit 3753